

# Surface Water Monitoring for Pesticides in the Karuk and Hupa Territories

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## Overview

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## Introduction

- Tribes concern about impacts of herbicide applications
- Conducted community meetings with tribes
- Implement recommendations from tribes
- Formed Tribal Workgroups
- Conduct Workgroup meetings, provide information and field visits
- Tribes set priority and select monitoring sites and sampling media
- Conduct studies, disseminate information

## Objectives

- Measure the concentration of insecticides and herbicides in surface waters of the Karuk and Hupa ancestral territories
- Sample under conditions with the highest likelihood of detecting residues from rain or irrigation runoff.

## Methods

### Sampling Sites

- Karuk
  - Klamath River @ Horse Creek Bridge
  - Scott River @ Hwy 96
  - Elk Creek
- Hupa
  - Pine Creek
  - Supply Creek
  - Trinity River @ Tish Tang





Horse Creek Bridge



Equal Width Increment Sampling: Horse Ck Bridge



Scott River



Scott River

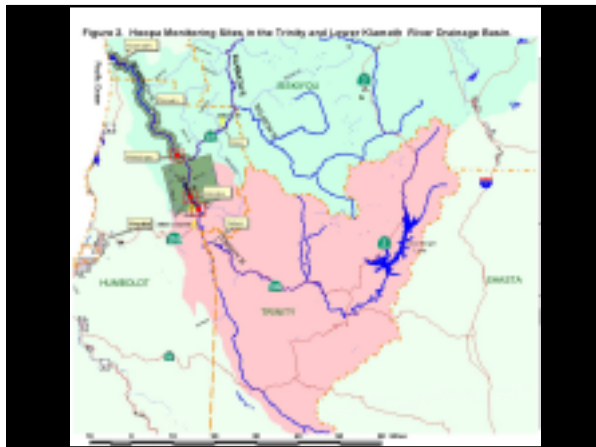


Scott River @Klamath R



Elk Creek





## Pesticides Analyzed

- Herbicides (13)

2,4-D, atrazine, bromacil, cyanazine, diuron, glyphosate, hexazinone, metribuzin, MCPA, prometon, prometryn, simazine, triclopyr

## Pesticides Analyzed

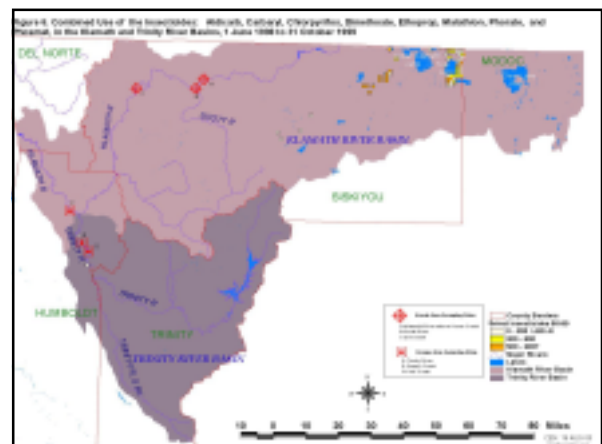
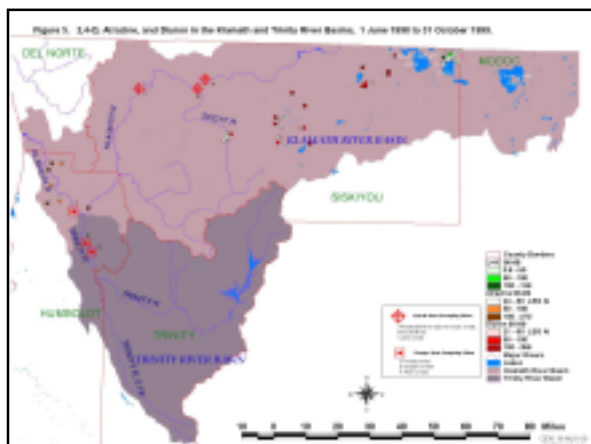
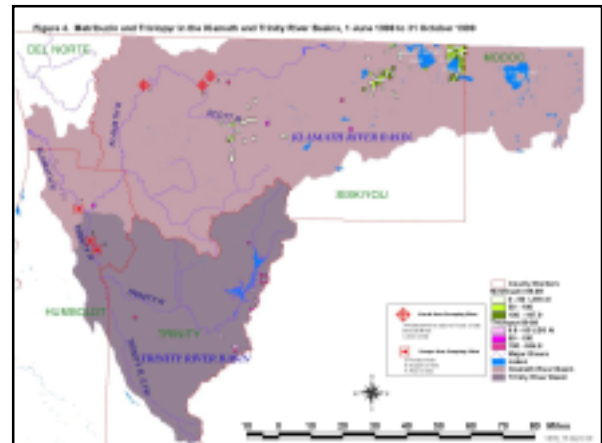
- Insecticides (18)

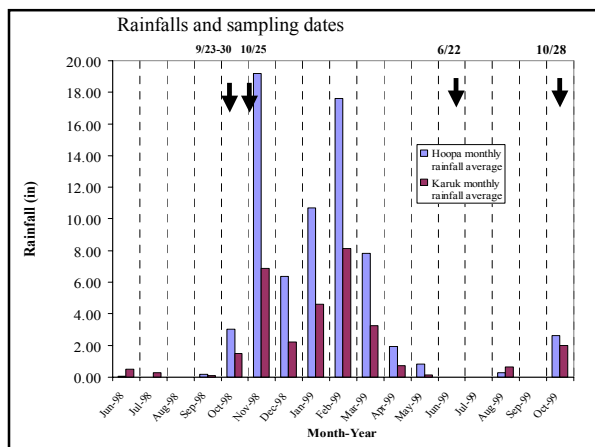
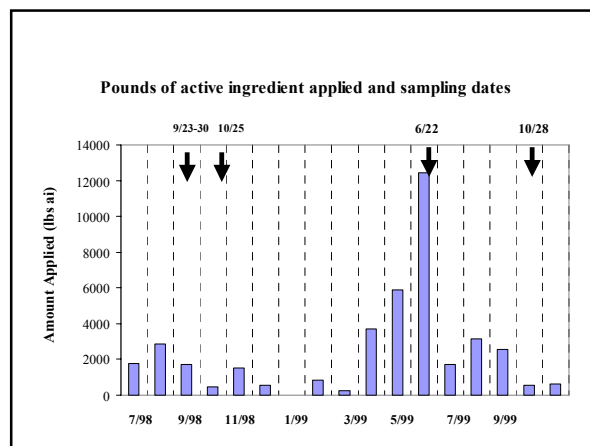
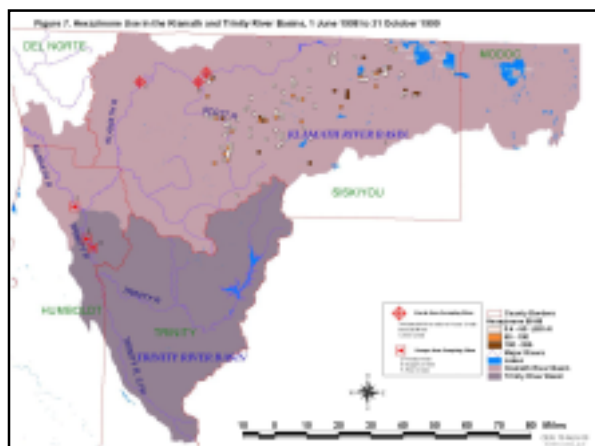
azinphos-methyl, chlorpyrifos, DDVP, diazinon, dimethoate, ethoprop, fonofos, malathion, methidathion, phosalone, phosmet, phorate.

aldicarb, carbaryl, carbofuran, methiocarb, methomyl, oxamyl.

## Results and Discussion

### Pesticide Use and Rainfall





## Summary

- Sampled six sites, four dates
- Analyzed 108 water samples
- Analyzed for 32 chemicals
- 40,631 lbs active ingredients applied
- Received Karuk (30") Hupa (70") of rainfalls
- Detected no herbicides or insecticides
- Detection levels 0.04-2.0 ppb

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